IN THE CLAIMS

1-35. (canceled)

36. (previously amended) The method of claim 66 wherein the step of administering is via the oral route.

37. (previously added) The method of claim 36 wherein the bacterium is top-dressed on the feed of the ruminant.

38. (previously amended) The method of claim 66 wherein the step of administering comprises injecting the bacterium subcutaneously.

39. (previously amended) The method of claim 66 wherein the step of administering comprises injecting the bacterium intradermally.

40. (previously amended) The method of claim 66 wherein the step of administering comprises injecting the bacterium intramuscularly.

41. (previously amended) The method of claim 66 wherein the step of administering is via the nose.

42-65. (canceled)

66. (currently amended) A method of inducing immunity to pneumonic pasteurellosis in ruminants, comprising the step of:

administering to a ruminant a live *P. haemolytica* bacterium which (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces~~

~~antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

67. (currently amended) A method of inducing immunity to pneumonic pasteurellosis in ruminants, comprising the step of:

administering to a ruminant a lyophilized *P. haemolytica* bacterium, wherein a live form of the lyophilized bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

68. (previously added) The method of claim 67 wherein the step of administering is via the oral route.

69. (previously added) The method of claim 68 wherein the lyophilized bacterium is top-dressed on the feed of the ruminant.

70. (previously added) The method of claim 67 wherein the step of administering comprises injecting the lyophilized bacterium subcutaneously.

71. (previously added) The method of claim 67 wherein the step of administering comprises injecting the lyophilized bacterium intradermally.

72. (previously added) The method of claim 67 wherein the step of administering comprises injecting the lyophilized bacterium intramuscularly.

73. (previously added) The method of claim 67 wherein the step of administering is via the nose.

74. (currently amended) A method of inducing immunity to pneumonic pasteurellosis in ruminants, comprising the step of:

administering to a ruminant a lyophilized and reconstituted *P. haemolytica* bacterium, wherein a live form of the lyophilized and reconstituted bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

75. (previously added) The method of claim 74 wherein the step of administering is via the oral route.

76. (previously added) The method of claim 75 wherein the lyophilized and reconstituted bacterium is top-dressed on the feed of the ruminant.

77. (previously added) The method of claim 74 wherein the step of administering comprises injecting the lyophilized and reconstituted bacterium subcutaneously.

78. (previously added) The method of claim 74 wherein the step of administering comprises injecting the lyophilized and reconstituted bacterium intradermally.

79. (previously added) The method of claim 74 wherein the step of administering comprises injecting the lyophilized and reconstituted bacterium intramuscularly.

80. (previously added) The method of claim 74 wherein the step of administering is via the nose.

81. (currently amended) A method of inducing immunity to pneumonic pasteurellosis in ruminants, comprising the step of:

administering to a ruminant a killed *P. haemolytica* bacterium, wherein a live form of the killed bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

82. (previously added) The method of claim 81 wherein the step of administering is via the oral route.

83. (previously added) The method of claim 82 wherein the killed bacterium is top-dressed on the feed of the ruminant.

84. (previously added) The method of claim 81 wherein the step of administering comprises injecting the killed bacterium subcutaneously.

85. (previously added) The method of claim 81 wherein the step of administering comprises injecting the killed bacterium intradermally.

86. (previously added) The method of claim 81 wherein the step of administering comprises injecting the killed bacterium intramuscularly.

87. (previously added) The method of claim 81 wherein the step of administering is via the nose.

88. (currently amended) A feed for ruminants which comprises a live *P. haemolytica* bacterium which (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active

leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

89. (currently amended) A feed for ruminants which comprises a lyophilized *P. haemolytica* bacterium, wherein a live form of the lyophilized bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

90. (currently amended) A feed for ruminants which comprises a lyophilized and reconstituted *P. haemolytica* bacterium, wherein a live form of the lyophilized and reconstituted bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

91. (currently amended) A feed for ruminants which comprises a killed *P. haemolytica* bacterium, wherein a live form of the killed bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

92. (currently amended) A vaccine for reducing morbidity in ruminants, comprising a live *P. haemolytica* bacterium which (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

93. (currently amended) A vaccine for reducing morbidity in ruminants, comprising a lyophilized *P. haemolytica* bacterium, wherein a live form of the lyophilized bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

94. (currently amended) A vaccine for reducing morbidity in ruminants, comprising a lyophilized and reconstituted *P. haemolytica* bacterium, wherein a live form of the lyophilized and reconstituted bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

95. (currently amended) A vaccine for reducing morbidity in ruminants, comprising a killed *P. haemolytica* bacterium, wherein a live form of the killed bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which is a deletion

mutant of about 66 kDa which lacks amino acids 34 to 378 and which induces antibodies which specifically bind to and neutralize biologically active leukotoxin ~~induces antibodies which neutralize biologically active leukotoxin~~, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.